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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/691,874	10/19/2000	James A. Proctor JR.	2479.2009-000	5418

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EXAMINER

SCHEIBEL, ROBERT C

ART UNIT	PAPER NUMBER
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2616

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/691,874

Applicant(s)

PROCTOR, JAMES A.

Examiner

Robert C. Scheibel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

- Examiner acknowledges receipt of the amendment filed 1/29/2007.
- Claims 1, 3, 5, 13, and 22-24 are currently amended.
- Claims 1-24 are currently pending.

Response to Arguments

1. Applicant's arguments, see pages 9-11, filed 1/29/2007, with respect to the rejection of claims 1-5, 7-9, 13, 15-18, and 22-24 under 35 U.S.C. 102(e) and claims 6, 11, 14, and 20 under 35 U.S.C. 103(a) have been fully considered but they are not persuasive. In "Claim Rejections" on page 9, Applicant begins by summarizing the rejections that are traversed. In the next paragraph, Applicant asserts that Reese does not disclose that the forward and reverse time slots are out of phase by less than one time slot interval. Applicant cites portions of Reese stating that Reese discloses forward and reverse time frames made up of multiple time slots which are offset by a predetermined duration which is a number of time slots. In the next paragraph (on page 10), Applicant restates a portion of claim 1 and then indicates that the claim is distinguished from Reese because the newly added limitation indicates that the offset between the first and second cycles is less than one time slot interval. Applicant summarizes this argument on page 11 and then indicates that dependent claims are allowable for the same reasons.

Examiner respectfully disagrees. Examiner is interpreting the "time slot interval" discussed in the claims and the specification to be the period of the "cycles" (of a plurality of channels) of the claims and the specification (also referred to as epochs). These plurality of channels are the time slots illustrated in Figure 6 (which is a more detailed version of Figure 3)

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and the time slot interval is the length of the n-time slot intervals in this figure. The forward and reverse cycles are offset by less than one “time slot interval” (n). The time frames 302 and 303 of Reese are equivalent to these cycles or epochs of the present application. The forward and reverse time frames are offset by an amount (3 time slots) less than the time slot interval of these time frames (8 time slots) and thus disclose this limitation of the claims. For at least these reasons, the previous rejection is maintained herein.

Specification

2. The disclosure is objected to because of the following informalities:

- In line 29 of page 5, “Figs 1 and 2” should be corrected to “Figs 2 and 3”.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims **1, 22, and 23** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim **22**, the claim recites “a computer program product including computer program code”. This is a claim to functional descriptive material claimed as descriptive material, per se. This is not statutory subject matter. As stated in *Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility*, “Both types of ‘descriptive material’ are nonstatutory when claimed as descriptive material per se” (page 50). Similarly, on page 53,

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these guidelines state: “Similarly, computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical ‘things.’ They are neither computer components nor statutory processes, as they are not ‘acts’ being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program’s functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program’s functionality to be realized, and is thus statutory.”

Please refer to the *Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility*, pages 50-53 for more information.

Regarding claim 23, the claim recites “a computer data signal” which is a claim to a nonstatutory natural phenomenon. The signal claim does not fall into one of the four statutory classes of 35 U.S.C. 101. Refer to pages 55-57 of *Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility* for more information.

Regarding claim 1, the claim is non-statutory as is evident from claim 22 and the disclosure. Even though claim 1 appears as a seemingly patentable process claim, in reality, the claim seeks patent protection for an abstract idea as a “computer program product”. Stated another way, based on the computer program product of claim 22, claim 1 clearly can be a computer program. That is, it is “functional descriptive material” that fails to provide a practical application by producing any tangible, concrete and useful result; this has been held to be non-

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statutory subject matter according to the *Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility* as indicated above.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-9, 13-18, and 22-24 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,226,274 to Reese.

Regarding claim 1, Reese discloses a method of staggering channels in a wireless communications unit comprising: identifying a first plurality of channels dedicated for wireless communication from the wireless communications unit to one or more remote wireless communications units and identifying a second plurality of channels dedicated for communication from the one or more remote wireless communications units to the wireless communications unit; (see figure 3 showing 8 channels for receiving, and 8 for transmitting) scheduling the first plurality of channels according to a first predetermined cycle, and scheduling the second plurality of channels according to a second predetermined cycle, wherein each channel in the first and second plurality of channels is dedicated for communication between the wireless communications unit at a predetermined time slot interval and a single remote wireless communications unit and, wherein the second predetermined cycle by less than one time slot

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interval is out of phase with the first predetermined cycle (see figure 3 and column 2, lines 23-31; the interval is 8 slots; the transmit and receive cycles are out of phase by 3 slots, which is less than 8).

Regarding claim 2, the wireless communication unit is a base station processor and the remote wireless communication unit is a subscriber access unit is disclosed in Reese, figure 1 (showing a base station and mobile units).

Regarding claim 3, Reese discloses a wireless communication unit operable for wireless communication with one or more remote wireless communication units via a first wireless link having a first plurality of channels dedicated for communication from the wireless communication unit to the one or more remote wireless communication units and at least one remote wireless communication unit operable for wireless communication with the wireless communication unit via a second wireless link having a second plurality of channels dedicated for communication from the remote wireless communication unit to the wireless communication unit (see figure 3 showing 8 channels for receiving, and 8 for transmitting); a local scheduler operable to schedule the first plurality of channels for wireless communication according to a first predetermined cycle; and a remote scheduler operable to schedule the second plurality of channels according to a second predetermined cycle, wherein each channel in the first and second plurality of channels is dedicated for communication between the wireless communication unit and a single remote wireless unit at a predetermined time slot interval and, wherein the first predetermined cycle is out of phase with the second predetermined cycle by less than one time slot interval (see figure 3 and column 2, lines 23-31; the interval is 8 slots; the transmit and receive cycles are out of phase by 3 slots, which is less than 8).

Regarding claim 4, the wireless communication unit is a base station processor and the remote wireless communication unit is a subscriber access unit is disclosed in Reese, figure 1 (showing a base station and mobile units).

Regarding claim 5, Reese discloses identifying a first channel dedicated for wireless communication from a base station processor to a subscriber access unit and identifying a second channel dedicated for wireless communication from a subscriber access unit to a base station processor (see figure 3 showing 8 channels for receiving, and 8 for transmitting); scheduling the first channel for wireless communication according to a first cycle, and scheduling the second channel for wireless communication according to a second cycle, wherein each channel is dedicated for communication between the wireless communication unit and a single remote wireless unit at a predetermined time slot interval, and wherein the first cycle is out of phase with the second cycle by less than one time slot interval (see figure 3 and column 2, lines 23-31; the interval is 8 slots; the transmit and receive cycles are out of phase by 3 slots, which is less than 8).

Regarding claim 6, Reese discloses the limitation that the first channel is scheduled by a first scheduler (the controller 910 of figure 9) in the base station processor, and the second channel is scheduled by a second scheduler (the controller 810 of figure 8) in the subscriber access unit

Regarding claim 7, the first cycle corresponds to a forward interval, and the second cycle corresponds to a reverse interval is disclosed in figure 3 (the first cycle is on the forward link, the second is on the reverse).

Regarding claim 8, the forward interval and the reverse interval are equal is disclosed in figure 3 (both are 8 slots).

Regarding claim 9, the forward interval and the reverse interval correspond to an integral multiple is disclosed in column 14, lines 64-66 (both intervals are 8 slots, so they are equal; 1 is an integer).

Regarding claim 13, Reese discloses a base station processor connected to a public access network and operable for wireless communication to one or more subscriber access units via a first plurality of wireless channels, at least one subscriber access unit in the one or more subscriber access units operable for wireless communication to the base station processor via a second plurality of wireless channels (see figure 3 showing 8 channels for receiving, and 8 for transmitting); a scheduler operable to allocate the wireless channels for wireless communication at a predetermined interval, wherein each channel in the first and second plurality of channels is dedicated for communication between the wireless communication unit and a single remote wireless unit at a predetermined time slot interval and, wherein the scheduler is further operable to schedule the first wireless channels according to a forward cycle, and to schedule the second wireless channels according to a reverse cycle, such that the forward cycle is out of phase with the reverse cycle by less than one time slot interval (see figure 3 and column 2, lines 23-31; the interval is 8 slots; the transmit and receive cycles are out of phase by 3 slots, which is less than 8).

Regarding claim 14, Reese discloses the limitation that the scheduler further comprises a forward scheduler in the base station processor (controller 910 in figure 9) and a reverse scheduler in the subscriber access unit (controller 810 in figure 8).

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Regarding claim 15, the forward cycle occurs at a forward interval and the reverse cycle occurs at a reverse interval is disclosed in figure 3 (the first cycle is on the forward link, the second is on the reverse).

Regarding claim 16, each of the forward channels and each of the reverse channels is allocated for a predetermined duration based on the forward interval and the reverse interval, respectively is disclosed in figure 3 (showing using the scheduled, cyclic slots on the forward and reverse frequencies).

Regarding claim 17, the forward interval of the forward cycle and the reverse interval of the reverse cycle are equal in duration is disclosed in figure 3 (both are 8 slots).

Regarding claim 18, the frequency of the forward interval and the frequency of the reverse interval correspond to an integral multiple is disclosed in column 14, lines 64-66 (both intervals are 8 slots, so they are equal; 1 is an integer).

Regarding claim 22, Reese discloses a computer program product including computer program code for allocating wireless channels in a wireless communication network (see column 11, lines 27-28 disclosing software for controlling TDD communications); computer program code for identifying a first channel dedicated for wireless communication to a subscriber access unit; computer program code for identifying a second channel dedicated for wireless communication to a base station processor (see figure 3 - showing 8 channels for receiving, and 8 for transmitting); computer program code for scheduling the first channel for wireless communication according to a first cycle; and computer program code for scheduling the second channel for wireless communication according to a second cycle, wherein each channel is dedicated for communication between the wireless communication unit and a single remote

wireless unit at a predetermined time slot interval, and wherein the first cycle is out of phase with the second cycle by less than one time slot interval (see figure 3 and column 2, lines 23-31; the interval is 8 slots; the transmit and receive cycles are out of phase by 3 slots, which is less than 8).

Regarding claim **23**, Reese discloses a computer data signal for allocating wireless channels in a wireless communication network (see column 11, lines 27-28 disclosing computer hardware/software for controlling TDD communications) comprising: program code for identifying a first channel dedicated for wireless communication to a subscriber access unit; program code for identifying a second channel dedicated for wireless communication to a base station processor (see figure 3 showing 8 channels for receiving, and 8 for transmitting); program code for scheduling the first channel for wireless communication according to a first cycle; and program code for scheduling the second channel for wireless communication according to a second cycle, wherein each channel is dedicated for communication between the wireless communication unit and a single remote wireless unit at a predetermined time slot interval, and wherein the first cycle is out of phase with the second cycle by less than one time slot interval (see figure 3 and column 2, lines 23-31 - the interval is 8 slots; the transmit and receive cycles are out of phase by 3 slots, which is less than 8).

Regarding claim **24**, Reese discloses a system for allocating wireless channels in a wireless communication network comprising: means for identifying a first channel dedicated for wireless communication to a subscriber access unit; means for identifying a second channel dedicated for wireless communication to a base station processor (see figure 3 showing 8 channels for receiving, and 8 for transmitting); means for scheduling the first channel for

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wireless communication according to a first cycle; and means for scheduling the second channel for wireless communication according to a second cycle, wherein each channel is dedicated for communication between the wireless communication unit and a single remote wireless unit at a predetermined time slot interval, and wherein the first cycle is out of phase with the second cycle by less than one time slot interval (see figure 3 and column 2, lines 23-31 - the interval is 8 slots; the transmit and receive cycles are out of phase by 3 slots, which is less than 8).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims **10-12, and 19-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Reese in view of Applicant's Admitted Prior Art (AAPA).

Regarding claims **10 and 19**, Reese discloses all the limitations of parent claim 7 as indicated in the rejection under 35 U.S.C. 102(e) above. However, Reese does not disclose expressly the limitation that the forward interval and the reverse interval are between 26 and 27 ms. However, the limitation of the frame (or epoch) depends upon the wireless standard employed; it would be obvious to apply the teachings of Reese to another wireless standard. In lines 14-16 of page 6 of the specification, AAPA discloses that 26.6667 ms frames/epochs are

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used for a specific wireless protocol. It would have been obvious to one skilled in the art at the time of the invention to apply the offset teachings of Reese to another wireless standard. The motivation would be to allow the mobile station in the other wireless standard sufficient turn-around switching and processing time as suggested by Reese in lines 32-31 of column 2. Therefore, it would have been obvious to combine Reese with AAPA for the benefit of sufficient turn-around time to obtain the invention as specified in claims 10 and 19.

Regarding claims **11 and 20**, Reese discloses all the limitations of parent claim 7 as indicated in the rejection under 35 U.S.C. 102(e) above. However, Reese does not disclose expressly the limitation that the forward interval and the reverse interval are between 13 and 14 ms out of phase. However, the limitation of the frame (or epoch) depends upon the wireless standard employed; it would be obvious to apply the teachings of Reese to another wireless standard. In lines 14-16 of page 6 of the specification, AAPA discloses that 26.6667 ms frames/epochs are used for a specific wireless protocol. It would have been obvious to one skilled in the art at the time of the invention to apply the offset teachings of Reese to another wireless standard. In this case the offset would be about half of this frame/epoch (or between 13 and 14 ms). The motivation would be to allow the mobile station in the other wireless standard sufficient turn-around switching and processing time as suggested by Reese in lines 32-31 of column 2. Therefore, it would have been obvious to combine Reese with AAPA for the benefit of sufficient turn-around time to obtain the invention as specified in claims 11 and 20.

Regarding claims **12 and 21**, Reese discloses all the limitations of parent claim 7 as indicated in the rejection under 35 U.S.C. 102(e) above. However, Reese does not disclose expressly the limitation that the forward interval and the reverse interval are an epoch. However,

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this is a matter of semantics; the frame of Reese is equivalent to the epoch of other wireless standards. For example, in lines 14-16 of page 6 of the specification, AAPA discloses that 26.6667 ms frames/epochs are used for a specific wireless protocol. It would have been obvious to one skilled in the art at the time of the invention to apply the offset teachings of Reese to another wireless standard. The motivation would be to allow the mobile station in the other wireless standard sufficient turn-around switching and processing time as suggested by Reese in lines 32-31 of column 2. Therefore, it would have been obvious to combine Reese with AAPA for the benefit of sufficient turn-around time to obtain the invention as specified in claims 12 and 21.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert C. Scheibel whose telephone number is 571-272-3169. The examiner can normally be reached on Monday and Thursday from 7:00-5:30 Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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RC5 3-1-07
Robert C. Scheibel
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